

# *Life Science Education and Employment: Minorities in the Pipeline*

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*Workshop on Recruitment and  
Retention of Minorities  
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# Goals

- ✍ Show some characteristics of the education and employment pipeline for individuals educated in the life sciences
- ✍ Show some comparisons between underrepresented minorities and the majority population
- ✍ Learn about access to data that may help to inform policy and program decisions

# *Data on Minorities*

✍ Current categories: late 1970s / early 1980s

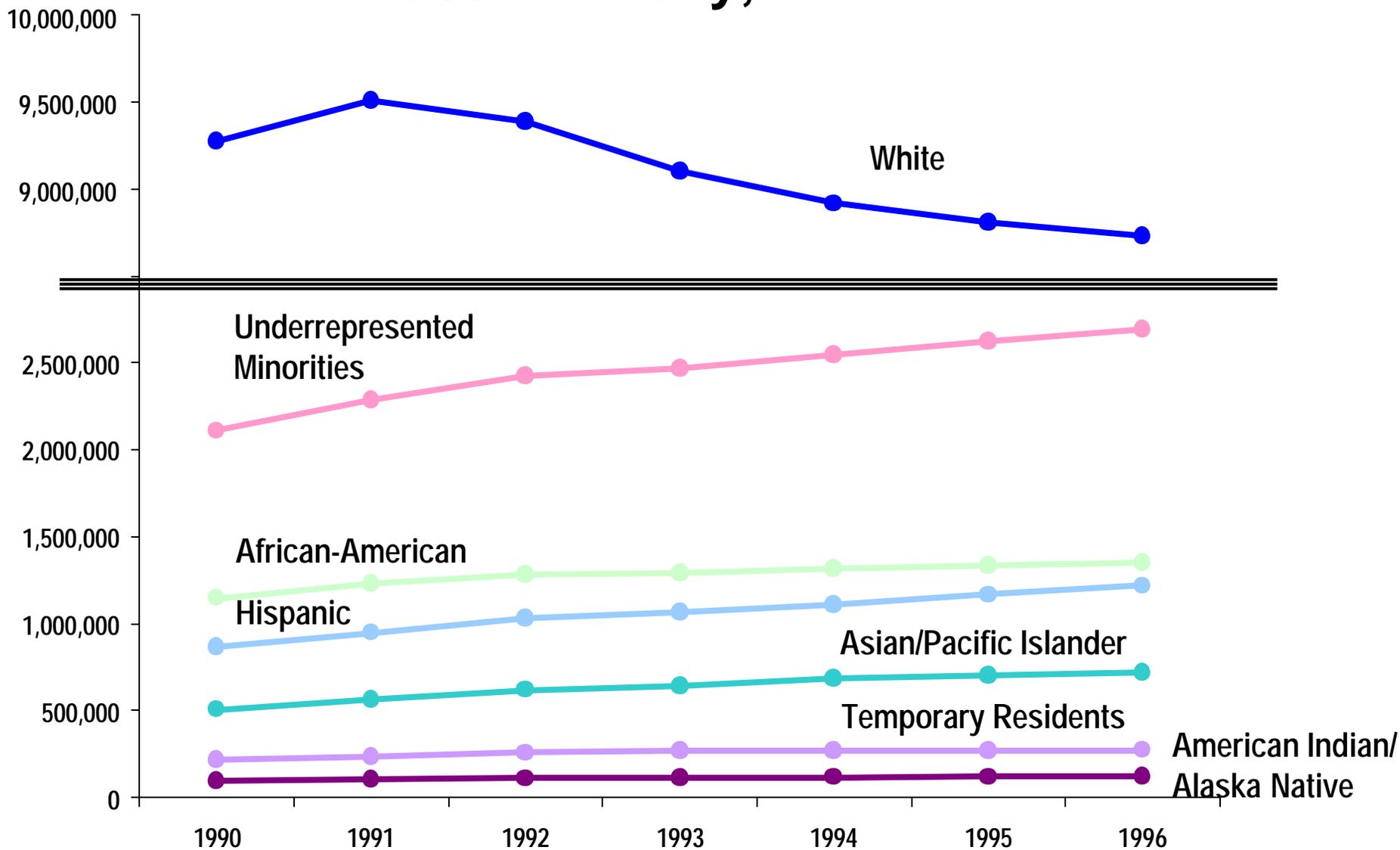
✍ Categories of interest:

- African-American
- Hispanic
- American Indian/Alaskan Native

✍ New categories in 2003

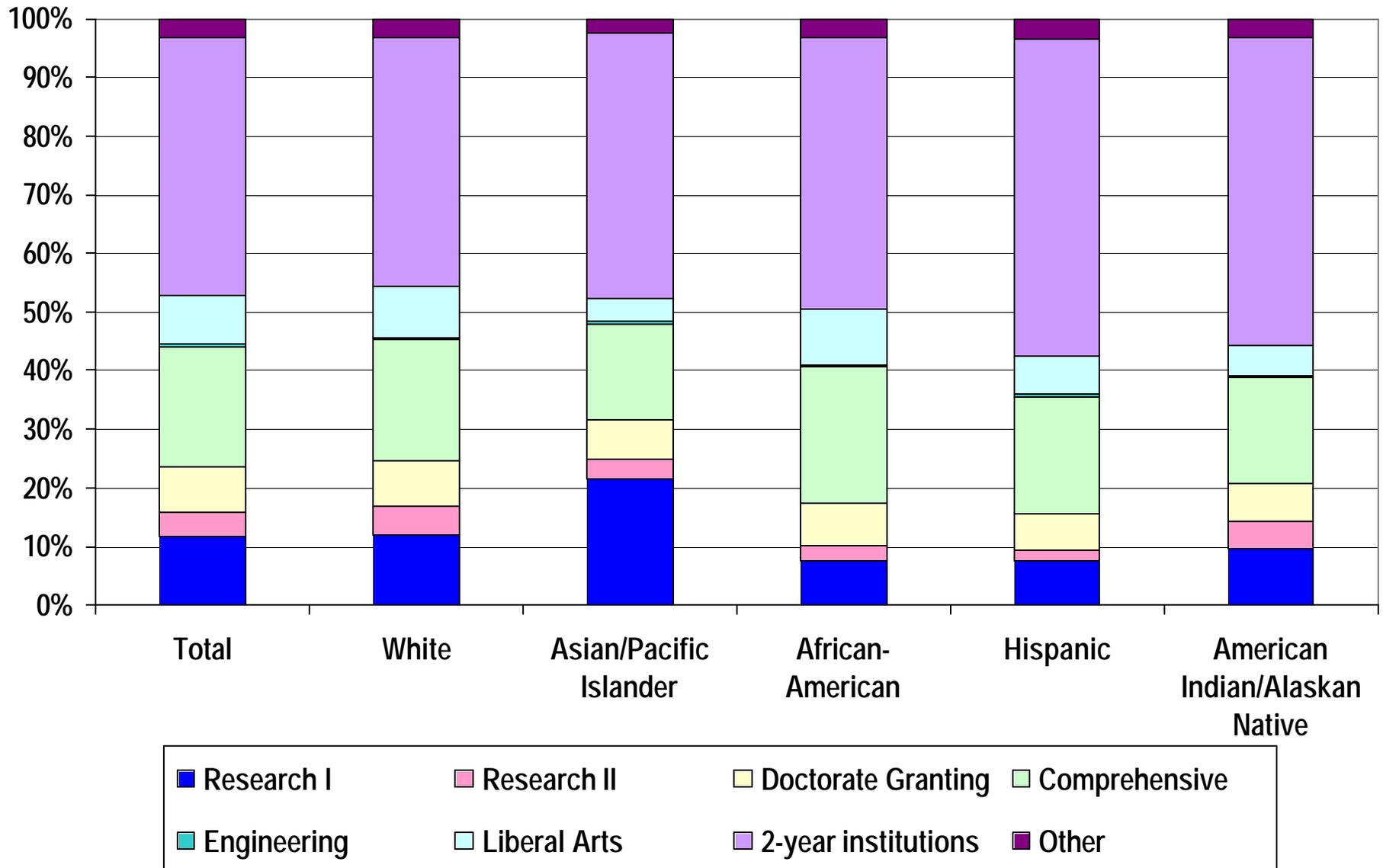
- Black/African-American
- Hispanic
- American Indian/Alaska Native
- Native Hawaiian/Pacific Islander
- Multiple choices

# Undergraduate Enrollment by Race/Ethnicity, 1990-1996



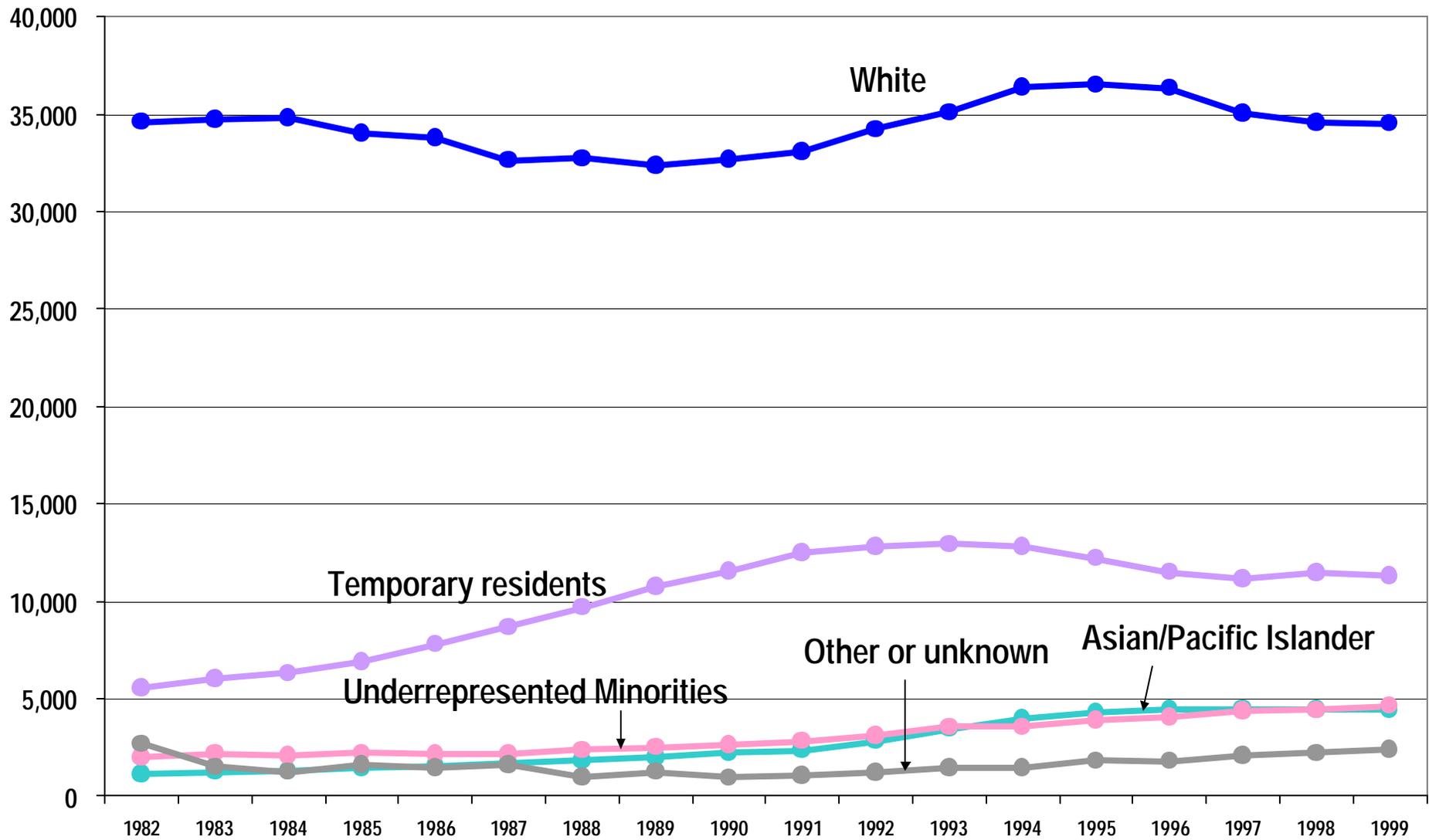
Source: Tabulations by National Science Foundation/Division of Science Resources Studies; data from U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Fall Enrollment Survey.

# Undergraduate Enrollment by Race/Ethnicity and Carnegie Classification, 1996



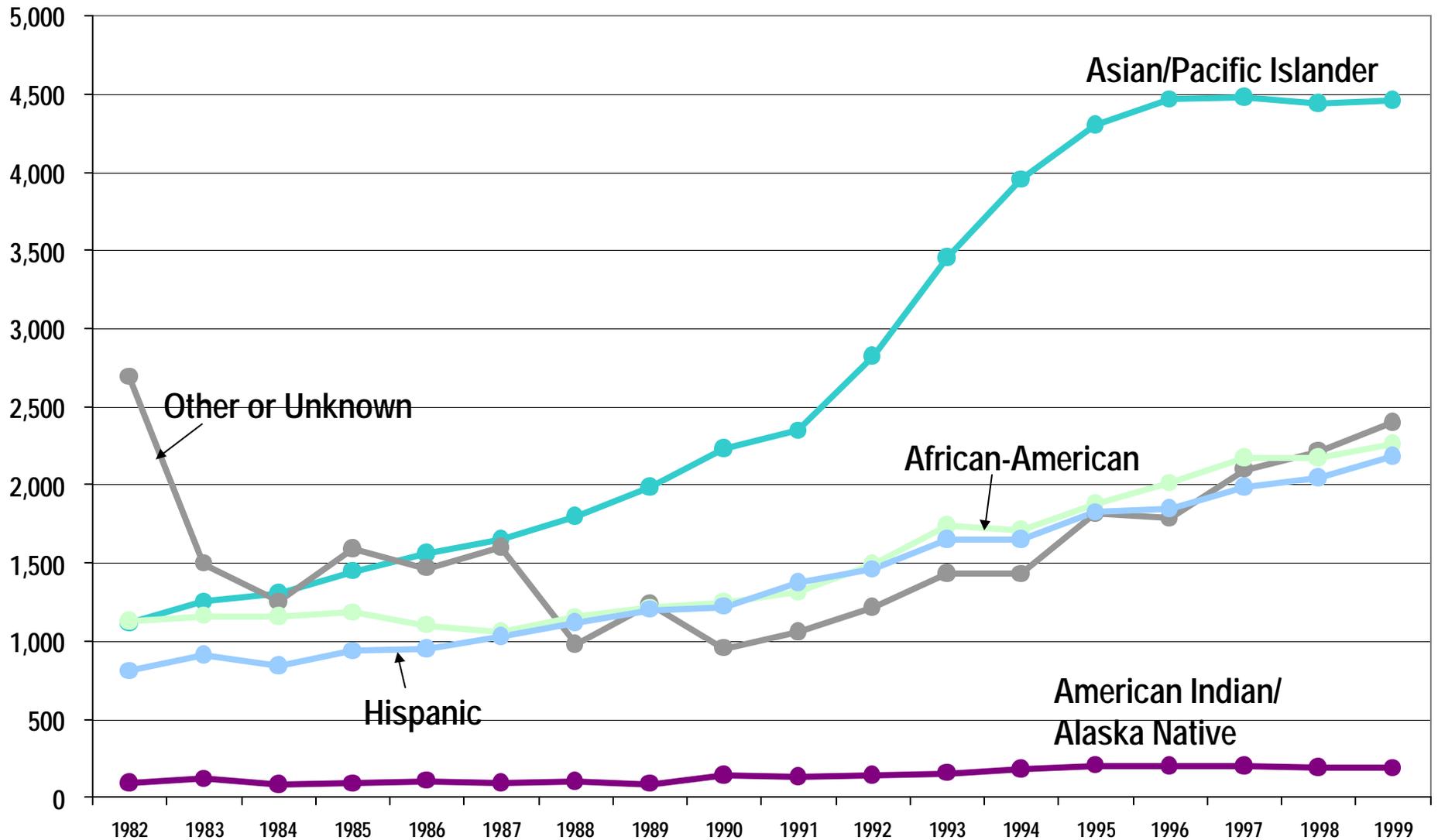
Source: Tabulations by National Science Foundation/Division of Science Resources Studies; data from U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Completions Survey.

# Graduate Enrollment at all Institutions in the Biological Sciences by Citizenship and Race/Ethnicity, 1982-1999



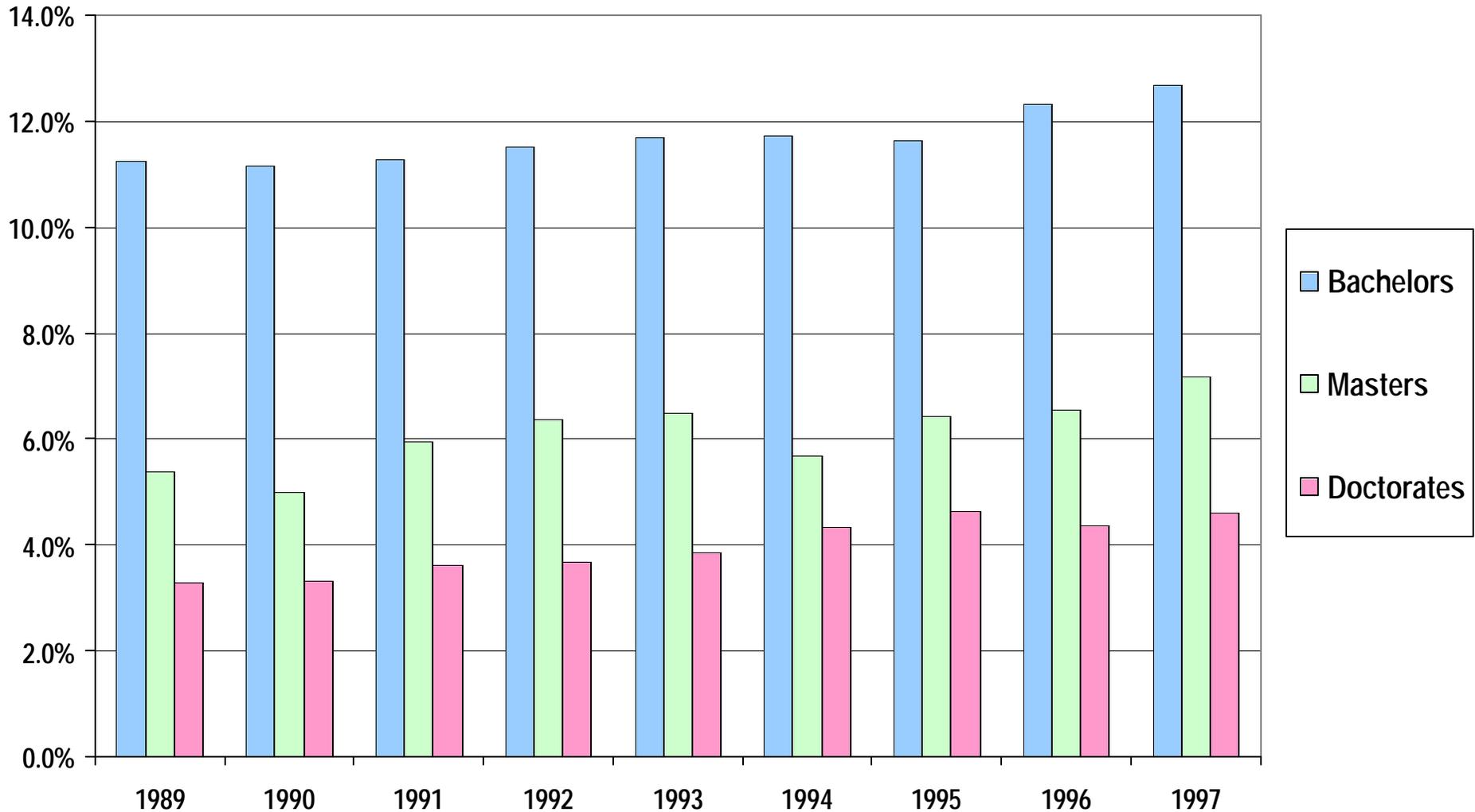
SOURCE: National Science Foundation/Division of Science Resources Studies, Survey of Graduate Students and Postdoctorates in Science and Engineering

# Graduate Enrollment at all Institutions in the Biological Sciences of Minority students by Race/Ethnicity, 1982-1999



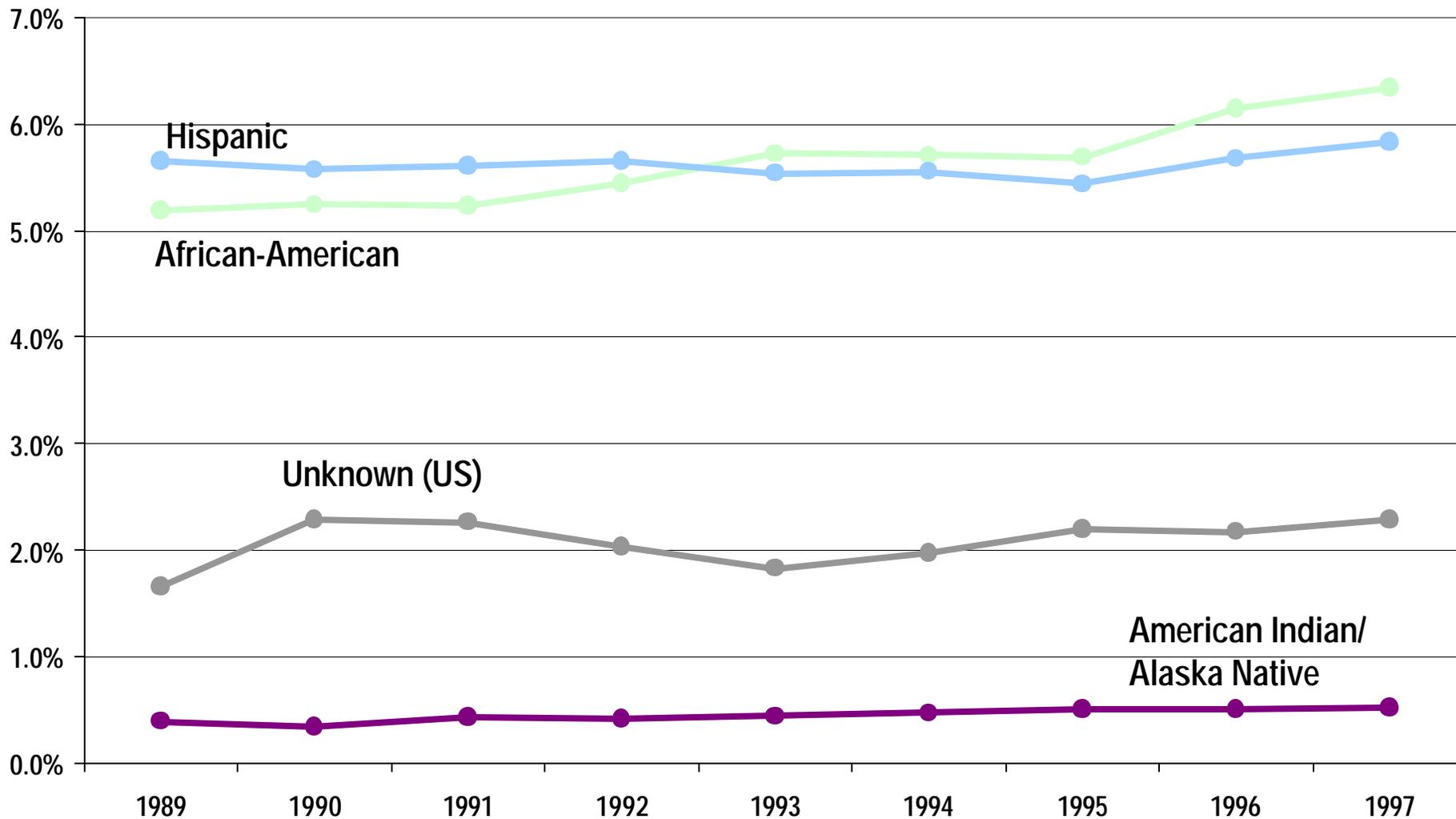
SOURCE: National Science Foundation/Division of Science Resources Studies, Survey of Graduate Students and Postdoctorates in Science and Engineering

# Underrepresented Minorities as a Proportion of All Individuals Who Earned Degrees in the Biological Sciences, by Degree Level, 1989-1997



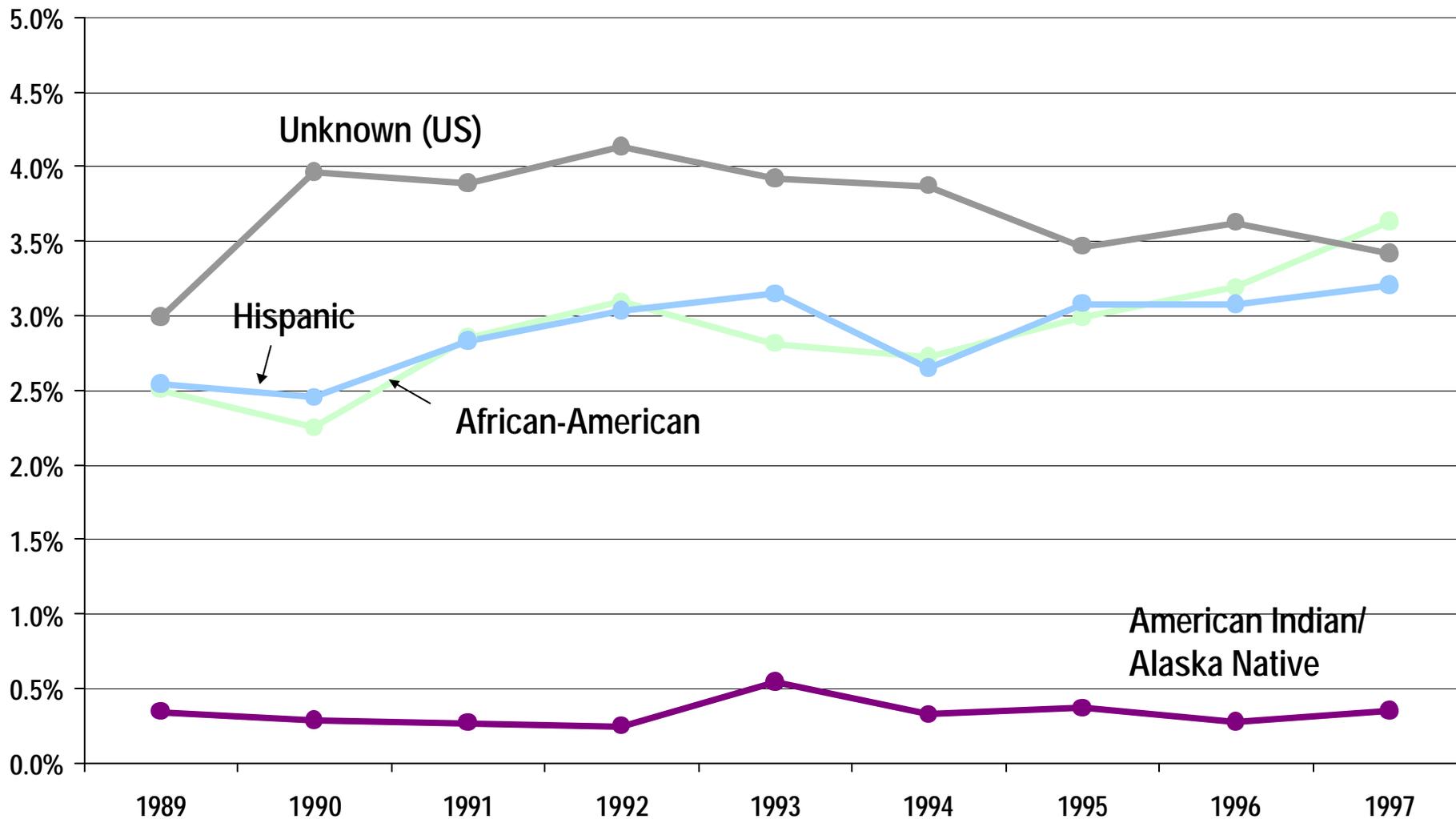
Source: Tabulations by National Science Foundation/Division of Science Resources Studies: bachelors' and masters' data from U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Completions Survey; doctorate data from NSF/SRS Survey of Earned Doctorates.

# Underrepresented Minorities as a Proportion of All Individuals Who Earned Bachelors Degrees in the Biological Sciences, 1989-1997



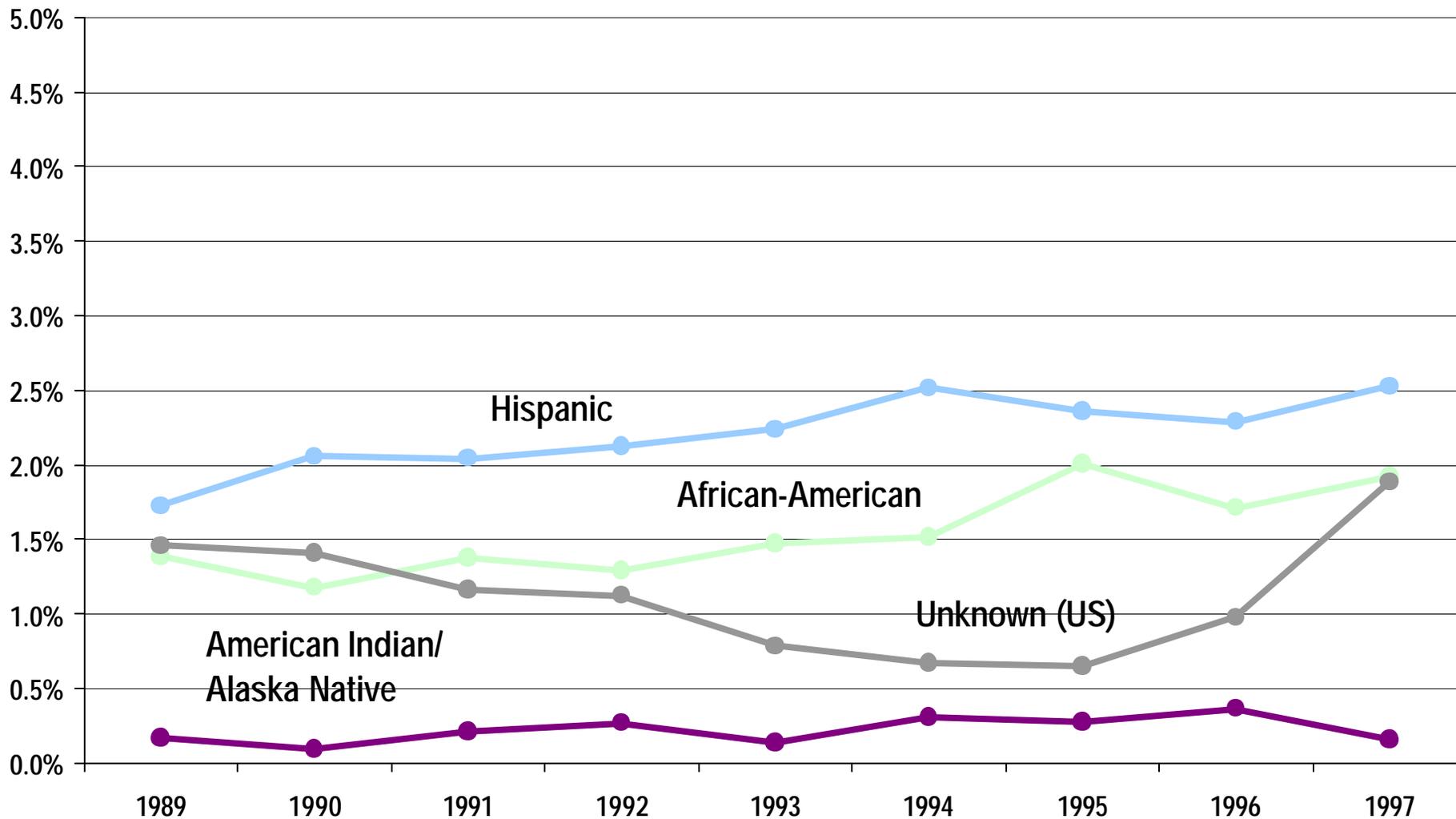
Source: Tabulations by National Science Foundation/Division of Science Resources Studies; data from U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Completions Survey.

# Underrepresented Minorities as a Proportion of All Individuals Who Earned Masters Degrees in the Biological Sciences, 1989-1997



Source: Tabulations by National Science Foundation/Division of Science Resources Studies; data from U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System, Completions Survey.

# Underrepresented Minorities as a Proportion of All Individuals Who Earned Doctoral Degrees in the Biological Sciences, 1989-1997



Source: Tabulations by National Science Foundation/Division of Science Resources Studies; data from NSF/SRS Survey of Earned Doctorates

# *Top Fields for Underrepresented Minority Doctorate Earners in the Biological Sciences (1999)*

	Total	Underrepresented Minorities
✎ <b>All Biological Science Fields</b>	5,600	300
✎ Molecular Biology	719	39
✎ Neuroscience	437	31
✎ Biochemistry	763	27
✎ Microbiology	382	20
✎ Pharmacology (human & animal)	254	18
✎ Physiology (human & animal)	243	15
✎ Cell Biology	285	14

Source: NSF/SRS, Survey of Earned Doctorates, 1999

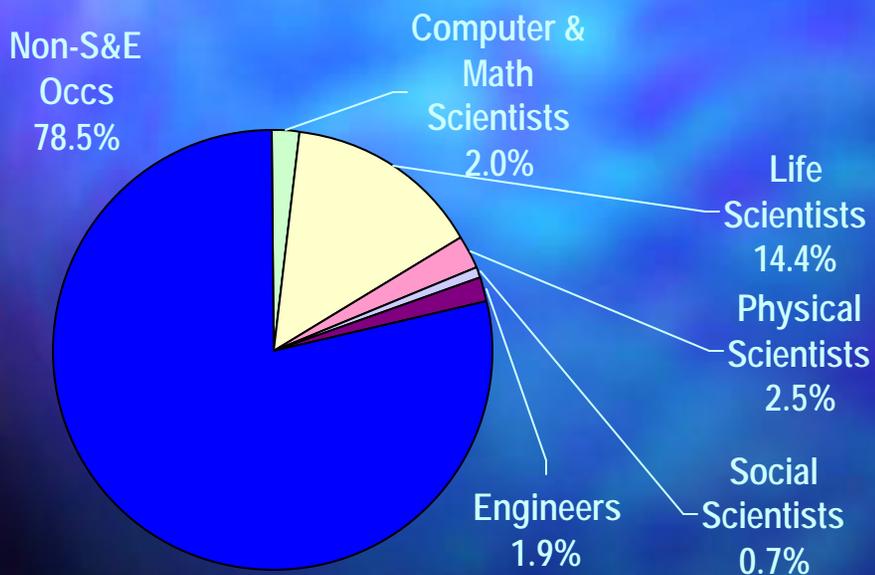
# *Life Science Degree Holders in the Labor Force (1997)*

- ✍ 10.6M employed scientists and engineers
  - 959,000 (9.1%) are underrepresented minorities
- ✍ 1.78M employed scientists and engineers hold at least one degree in the life sciences
  - 142,000 (14.9%) are underrepresented minorities

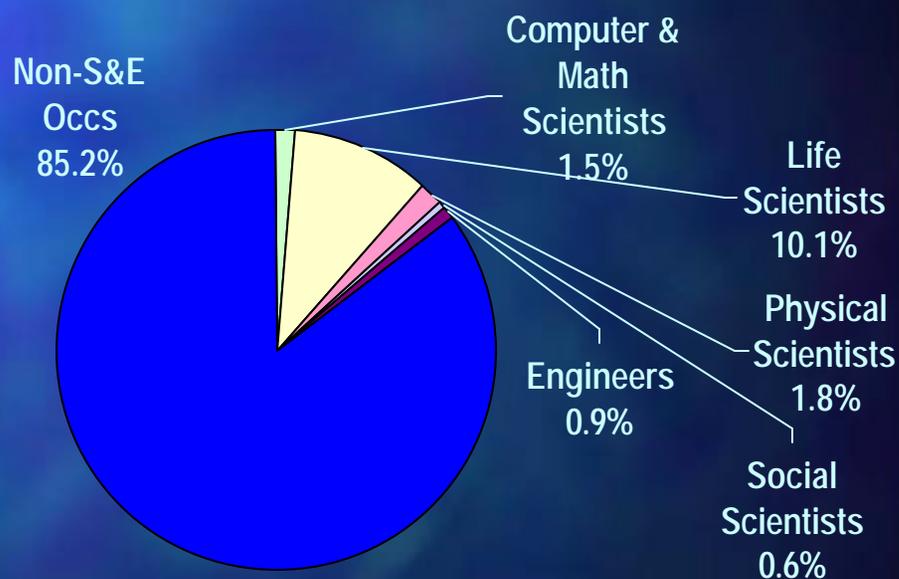
Source: NSF/SRS, Scientists and Engineers Statistical Data System (SESTAT), 1997

# Occupational Profile of Life Science Degree Holders (1997)

## Total

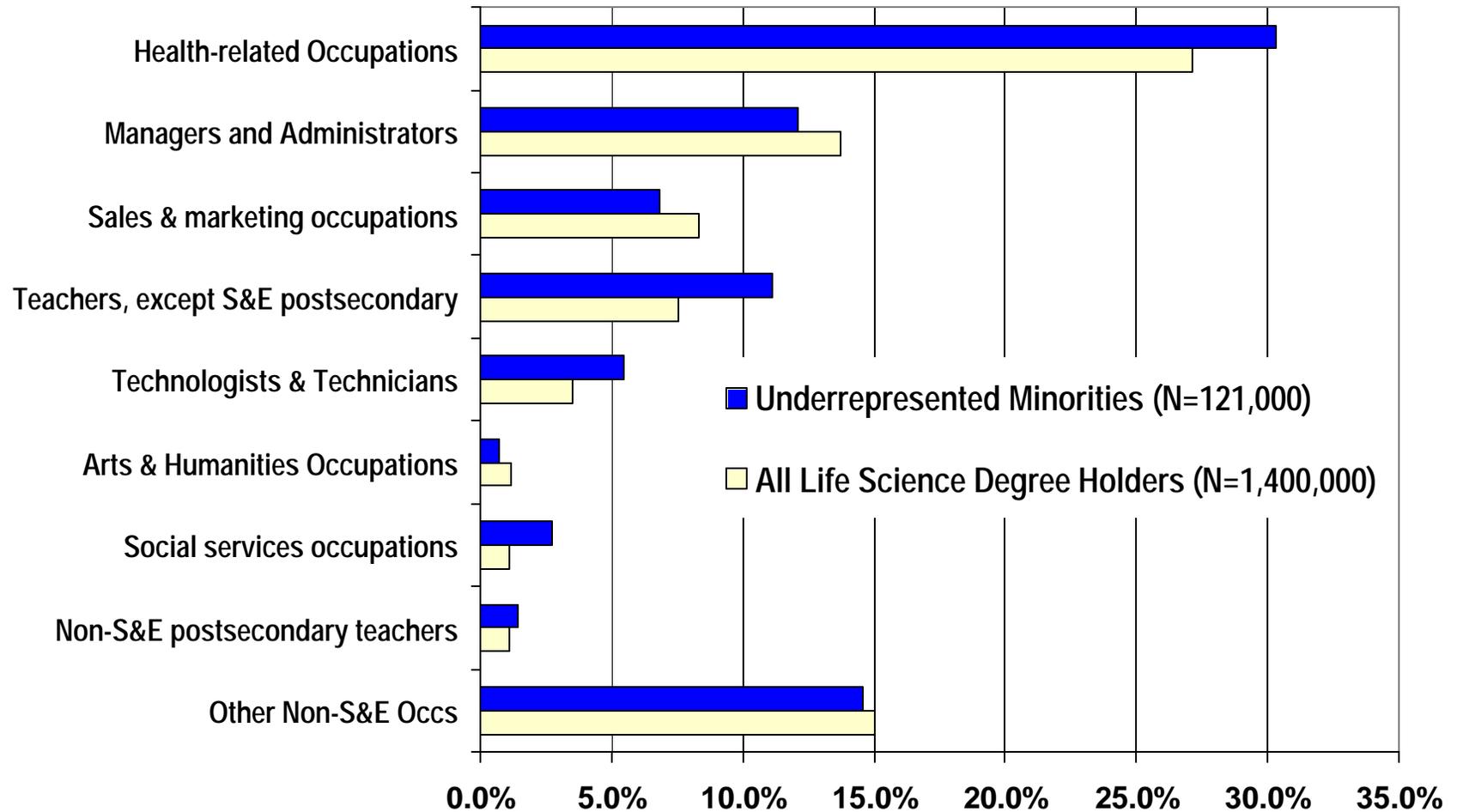


## Underrepresented Minorities



Source: NSF/SRS, Scientists and Engineers Statistical Data System (SESTAT), 1997

# Life Science Degree Holders in Non-S&E Occupations (1997)



Source: Tabulations by National Science Foundation/Division of Science Resources Studies; data from Scientists and Engineering Statistical Data System (SESTAT), 1997

# *The Pipeline Picture - Education*

## Trends

Higher Undergraduate  
URM Enrollments

Some Growth in  
Graduate URM  
Enrollments

Stable Proportion of  
Biological Science  
Degrees Awarded to  
URM Students in the  
1990s



## Possible Implications

Potential for Growth in  
Graduate Enrollments of  
URM Students

More Diversity in  
the Educational Pipeline

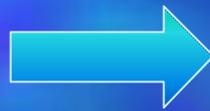
Potential for Growth in  
Programs to Attract  
Minority Students

# *The Pipeline Picture - Workforce*

## Trends

Higher proportion of employed life science degree holders are from URM groups than all S&Es

Employed life science degree holders who are from URM groups are more likely to be in Non-S&E Occs



## Possible Implications

Bio degree programs may be attracting URM students with more success than some other types of S&E degree programs

Potential to attract URM individuals educated in the life sciences to Life Science Occupations

# *Data Resources*

✍ Science Resources Studies Website  
[www.nsf.gov/sbe/srs/stats.htm](http://www.nsf.gov/sbe/srs/stats.htm)

✍ Electronic Publications  
[www.nsf.gov/sbe/srs/pubdata.htm](http://www.nsf.gov/sbe/srs/pubdata.htm)

✍ PUBLIC ACCESS TO ALL THE DATA  
[sestat.nsf.gov](http://sestat.nsf.gov)  
[caspar.nsf.gov](http://caspar.nsf.gov)